

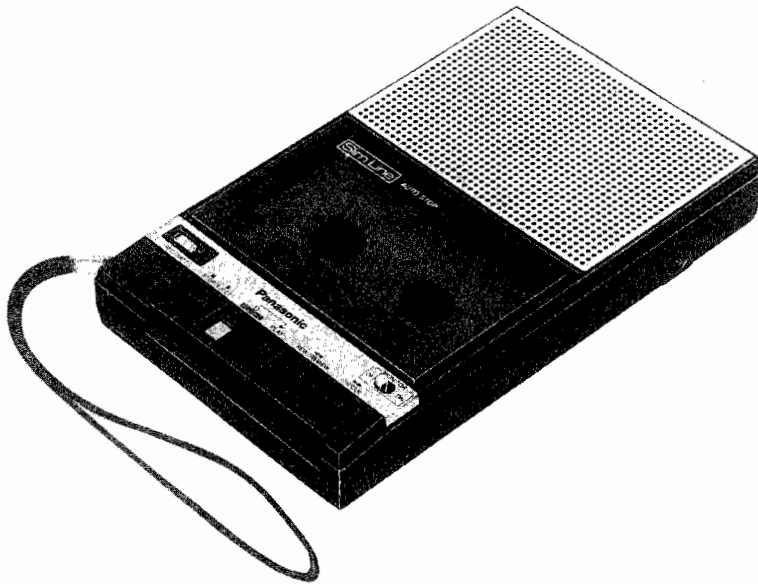
Service Manual

Super Slim-Line Cassette Recorder for
Personal Computer Data Storage

Portable Cassette
RQ-8200
(Black)

This is the Service Manual for the following areas.

- Ⓐ For all European areas except United Kingdom.
Ⓑ For United Kingdom.



RQ-2720 MECHANISM SERIES

Specifications

Power requirement:	Battery: 6V (four R6 dry batteries) Ⓐ ... AC; with optional AC adaptor RD-9477 Ⓑ ... AC; with optional AC adaptor RP-67
Motor:	Electrical governor motor
Power output:	600mW --- Max.
Frequency range:	100 — 8,000Hz
Tape speed:	4.8cm/s
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape
Track system:	2-track monaural recording and playback
Jacks:	Mic; sensitivity 0.25mV/applicable microphone impedance 200Ω—600Ω Remote; for start and stop at hand Ext. SP; 8Ω DC in; 6V
Speaker:	6.5cm
Dimensions:	119.0mm(W) × 29.9mm(H) × 198.5mm(D)
Weight:	535g, without batteries

Specifications are subject to change without notice.

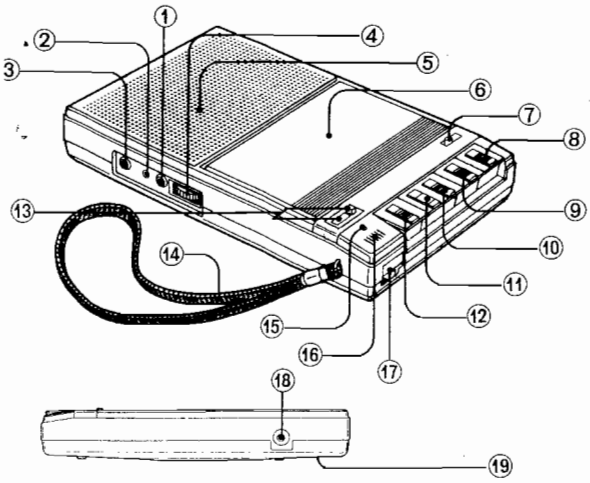
Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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LOCATION OF CONTROLS AND COMPONENTS



- ① Microphone Jack (MIC)

② Remote-Control Connection Jack (REMOTE)

③ External Speaker Jack [EXT. SP (8Ω)]

④ Volume Control [MIN-VOLUME-MAX.]

⑤ Built-in Speaker

⑥ Cassette Compartment Cover

⑦ Monitor Switch [MONITOR (OFF●ON)]

⑧ Fast Forward/Cue Button [FF/CUE (▶▶)]

⑨ Rewind/Review Button [REW/REVIEW (◀◀)]

⑩ Play Button [PLAY (▶)]
- ⑪ Record Button [RECORD (○)]

⑫ Stop/Eject Button [STOP/EJECT (■/▲)]

⑬ Tape Counter and Reset Button

⑭ Hand Strap

⑮ Recording Indicator/Battery-check Lamp (REC/BATT)

⑯ Built-in Microphone (MIC)

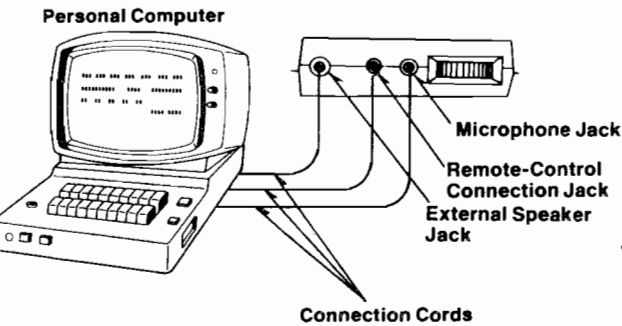
⑰ Pause Control [|| PAUSE (LOCK●OFF)]

⑱ Car Adaptor Connection Jack (DC IN 6 V) (⊖→⊕)

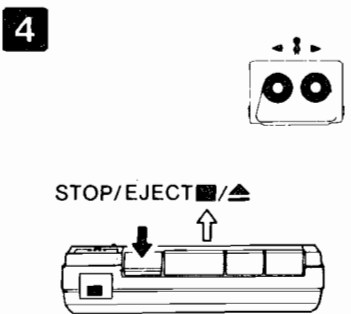
⑲ Battery Compartment [(↓) BATT OPEN]

OPERATING INSTRUCTIONS

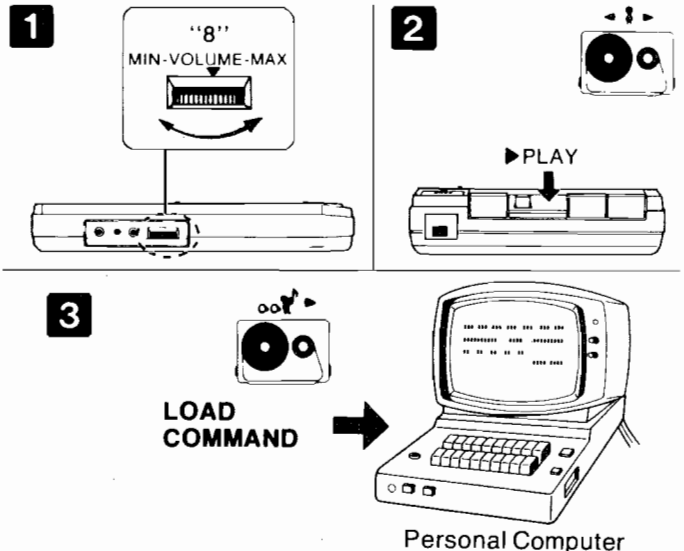
■ Connection with Personal Computer



- For details, refer to the operating instructions of the personal computer.
- When the monitor switch is set to "on", the signals of the personal computer can be monitored at a low volume from the built-in speaker during recording and playback.



PLAYING BACK (LOADING) PROGRAMS

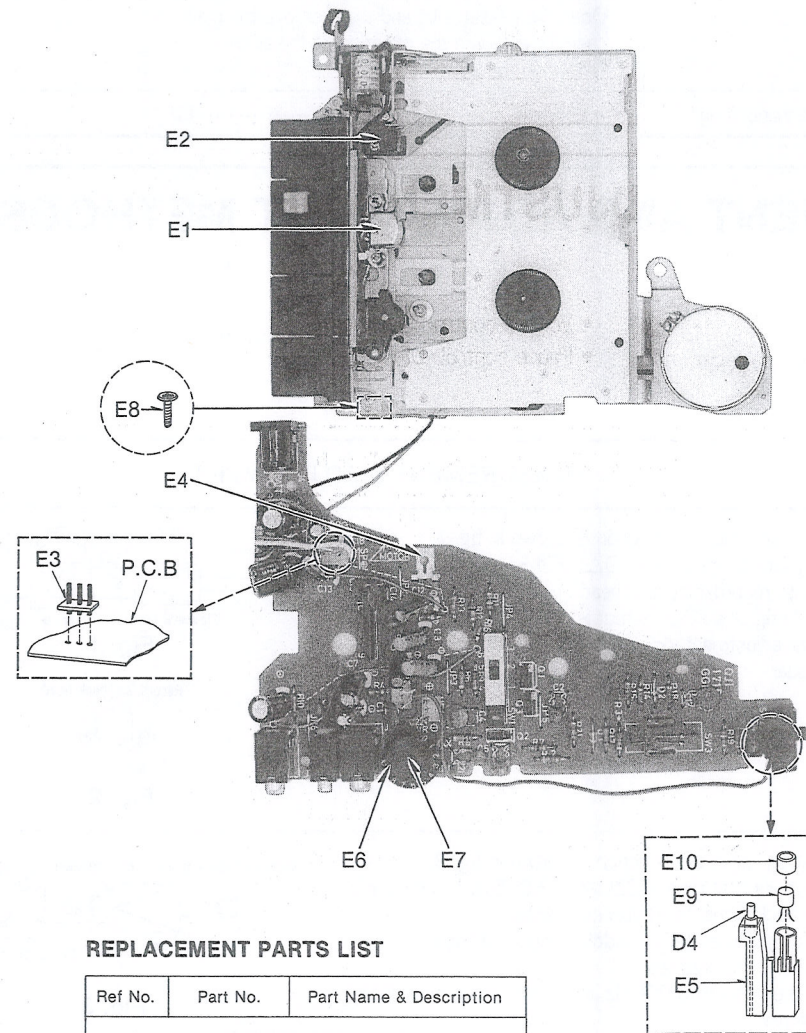


- Do not vary the volume while the tape is traveling since this may result an in error.

Notes:

- If the personal computer does not have a remote control function, push in the playback button and then set the pause switch to "on" immediately.
- The pause control is released when the personal computer is set to the load command, the tape is allowed to run and the program/data are read into the personal computer's memory.

ELECTRICAL PARTS LOCATION



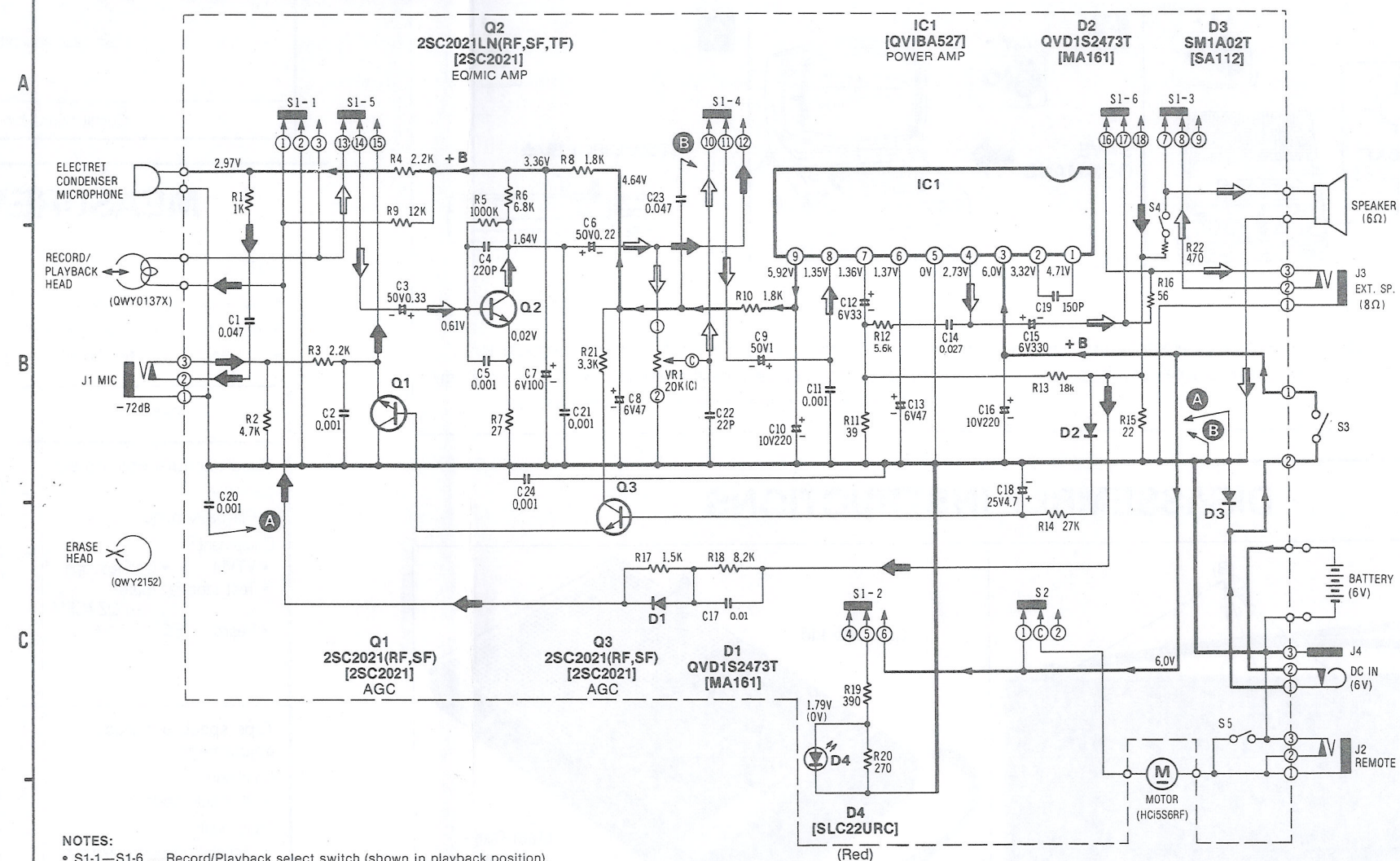
REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description
ELECTRICAL PARTS		
E 1	QWY0137X	Record/Playback Head
E 2	QWY2152	Erase Head
E 3	QJP1908JO	3Pin Post
E 4	QJC0043	Shield Plate
E 5	QKJ0478	LED Holder
E 6	QGT1602K	Volume Knob
E 7	XQN17B28FZ	Screw $\phi 1.7 \times 2.8$
E 8	XTN2 + 6B	Tapping Screw $\phi 2 \times 6$
E 9	WM063Y110	Condenser Microphone
E 10	QBG1695	Microphone Rubber

SPECIFICATIONS * Volume control ... MAX

Standard recording input level	MIC: around -72 dB
Overall frequency response	250Hz: -1 ± 5 dB 1 kHz: 0 dB 6 kHz: -7 ± 6 dB
Playback output level * Use test tape ... QZZCFM (315 Hz, 0 dB)	More than 1.7 V

SCHEMATIC DIAGRAM



NOTES:

- S1-1—S1-6.....Record/Playback select switch (shown in playback position).
- S2.....Pause Lock/OFF switch (shown in OFF position).
- S3.....Power ON/OFF switch (shown in OFF position).
- S4.....Monitor switch (shown in OFF position).
- S5.....FF/REW Switch (shown in OFF position).
- VR1.....Volume control.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
K = 1000 Ω .
- Capacity are in microfarads (μ F) unless specified otherwise.
P = Pico-farads.
- All voltage values shown in circuitry are under no signal condition and record mode with volume control at minimum position.
- However, the voltage in playback mode is indicated in () when it differs from that in record mode.
- For measurement, use VTVM.
- (\Rightarrow) this arrow indicates the flow of the playback signal.
- (\Rightarrow) this arrow indicates the flow of the recording signal.
- (\Rightarrow) this arrow indicates the flow of the playback and recording signal in combination.
- (\Rightarrow) indicates B+ (bias).
- Described in the schematic diagram are two types of numbers; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.
e.g. Q1
{2SC2021 (RF, SF)}.....Production parts number
{2SC2021SF}.....Supply parts number
D2
{QVD1S2473T}.....Production parts number
{(MA161)}.....Supply parts number
- The supply parts number is described alone in the replacement parts list.

• This schematic diagram may be modified at any time with the development of new technology.

NOTES: RESISTORS

ERD.....Carbon
ERG.....Metal-oxide
ERS.....Metal-oxide
ERO.....Metal-film
ERX.....Metal-film
ERQ.....Fuse type metallic
ERC.....Solid
ERF.....Cement

CAPACITORS

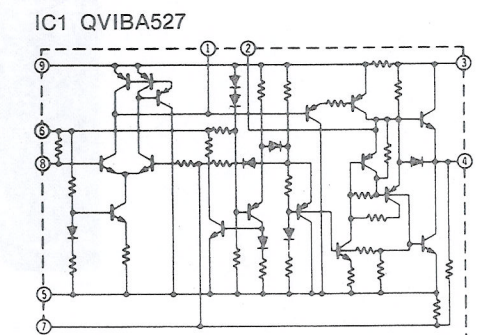
ECBA.....Ceramic
ECGD.....Ceramic
ECKD.....Ceramic
ECCD.....Ceramic
ECFD.....Ceramic
ECQM.....Polyester film
ECQE.....Polyester film
ECQF.....Polypropylene
ECEQ.....Electrolytic
ECEQN.....Non polar electrolytic
ECQS.....Polystyrene
ECSD.....Tantalum
QCS.....Tantalum

REPLACEMENT PARTS LIST

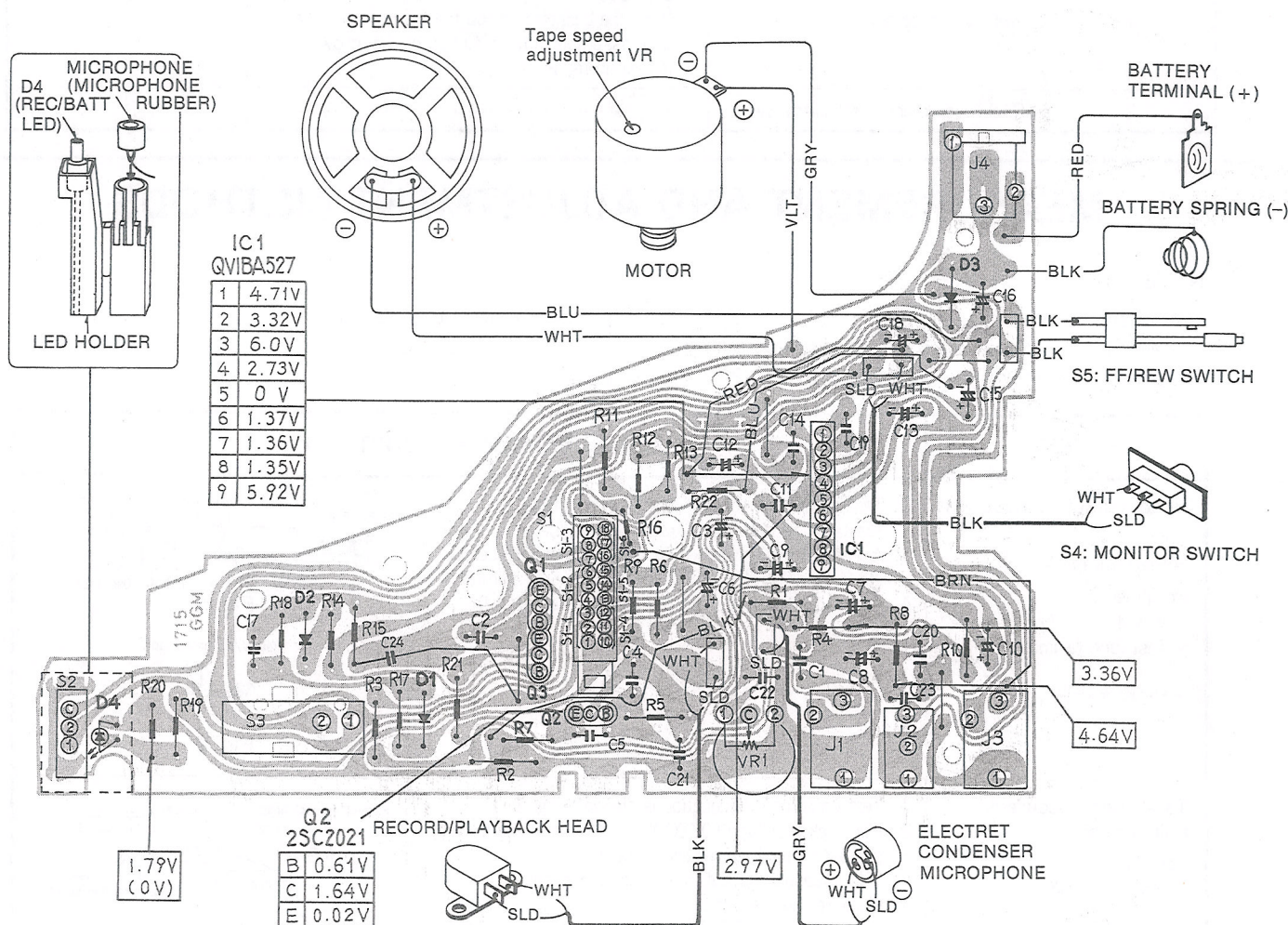
Ref No.	Part No.	Part Name & Description
SWITCHES		
S 1	QSS6220	Slide Switch (Record/Playback Selector)
S 2	QSS1227	Slide Switch (Pause ON/OFF)
S 3	QSB0272	Leaf Switch (Power ON/OFF)
S 4	QSS1230	Slide Switch (Monitor ON/OFF)
S 5	QSB0195	Leaf Switch (FF/REW ON/OFF)
JACKS		
J 1	QJA0154	M3 Jack (Microphone)
J 2	QJA0156	M2 Jack (Remote)
J 3	QJA0154	M3 Jack (Ext. Speaker)
J 4	QJA0149	DC IN Jack

Ref No.	Part No.
RESISTORS	
R 1	ERD25FJ102
R 2	ERD25FJ472
R 3, 4	ERD25FJ222
R 5	ERD25TJ105
R 6	ERD25FJ682
R 7	ERD25FJ270
R 8	ERD25FJ182
R 9	ERD25FJ123
R 10	ERD25FJ182
R 11	ERD25FJ390
R 12	ERD25FJ562
R 13	ERD25TJ183
R 14	ERD25TJ273
R 15	ERD25FJ220
R 16	ERD10TJ560
R 17	ERD25FJ152
R 18	ERD25FJ822
R 19	ERD25FJ391
R 20	ERD25FJ271
R 21	ERD25FJ332
R 22	ERD25FJ471
VARIABLE RESISTOR	
VR 1	EVLEAAT12C24
CAPACITORS	
C 1	ECFDD473KVY
C 2	ECFDD102KVY
C 3	ECEA50ZR33
C 4	ECCD1H221K
C 5	ECFDD102KVY
C 6	ECEA50ZR22
C 7	ECEA1AS101
C 8	ECEA1AS470
C 9	ECEA50Z1
C 10	ECEA1AS221
C 11	ECFDD102KVY
C 12	ECEA1CS330
C 13	ECEA1AS470
C 14	ECFDD273KVY
C 15	ECEA1AS331
C 16	ECEA1AS221
C 17	ECFDD103KVY
C 18	ECEA25Z4R7
C 19	ECCD1H151K
C 20, 21	ECFDD102KVY
C 22	ECCD1H220KC
C 23	ECFDD473KVY
C 24	ECFDD102KVY
TRANSISTORS	
Q 1, 2, 3	2SC2021
DIODES & RECTIFIERS	
D 1, 2	MA161
D 3	SM112
D 4	SLC22URC
INTEGRATED CIRCUIT	
IC 1	QVIBA527

EQUIVALENT CIRCUIT





CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM



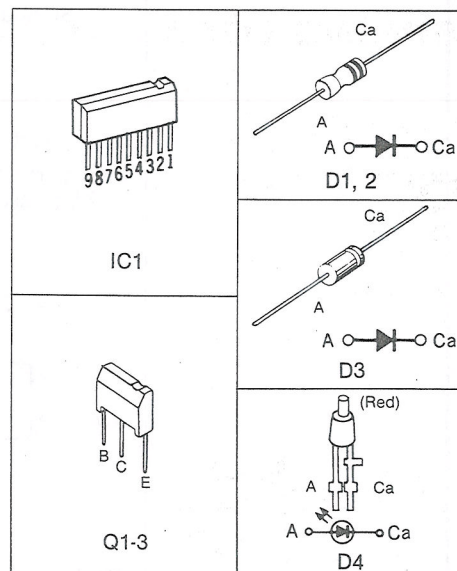
NOTES:

BLKBlack
 BLUBlue
 BRNBrown
 GRYGray
 GRNGreen
 L. BLULight Blue
 NILNo Color Mark
 ORGOrange
 PNKPink
 REDRed
 SLDShield Wire
 VLTViolet
 WHTWhite
 YELYellow

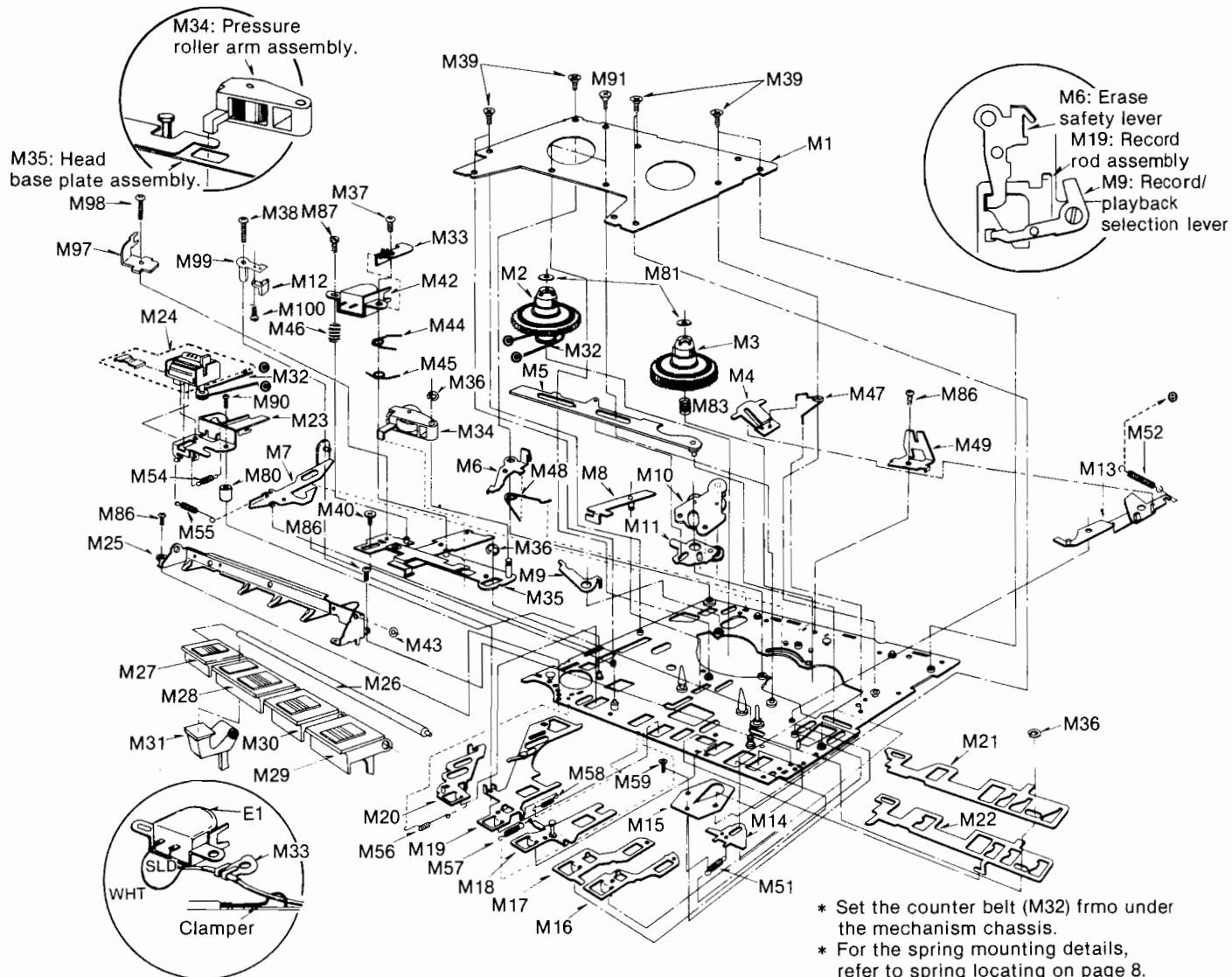
NOTES:

- This circuit shown in  on the conductor indicates printed circuit on the back side of the printed circuit board.
- Values indicated in  are DC voltage between the ground and electrical parts.
- All voltage values shown in circuitry are under no signal condition and record mode with volume control at minimum position. However the voltage in playback mode is indicated in () when it differs from that in record mode. For measurement, use VTVM.
- Described in the circuit boards and wiring connection diagram are two types of numbers; the supply parts number and production parts number for transistors. One type of number is used for supply parts number and production parts number when they are identical.
 e.g. Q2
 2SC2021(RF, SF, TF) — Production parts number
 [2SC2021LNSF] — Supply parts number
- The Supply parts number is described alone in the replacement parts list.
- This circuit board diagram may be modified at any time with development of new technology.

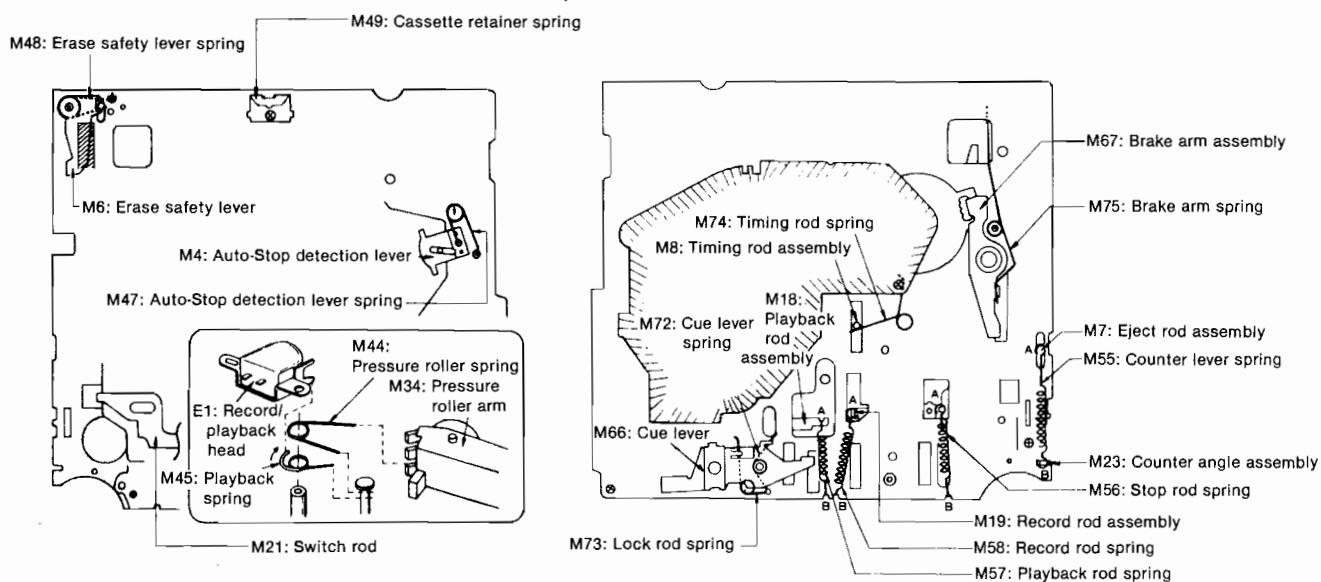
TERMINATIONS

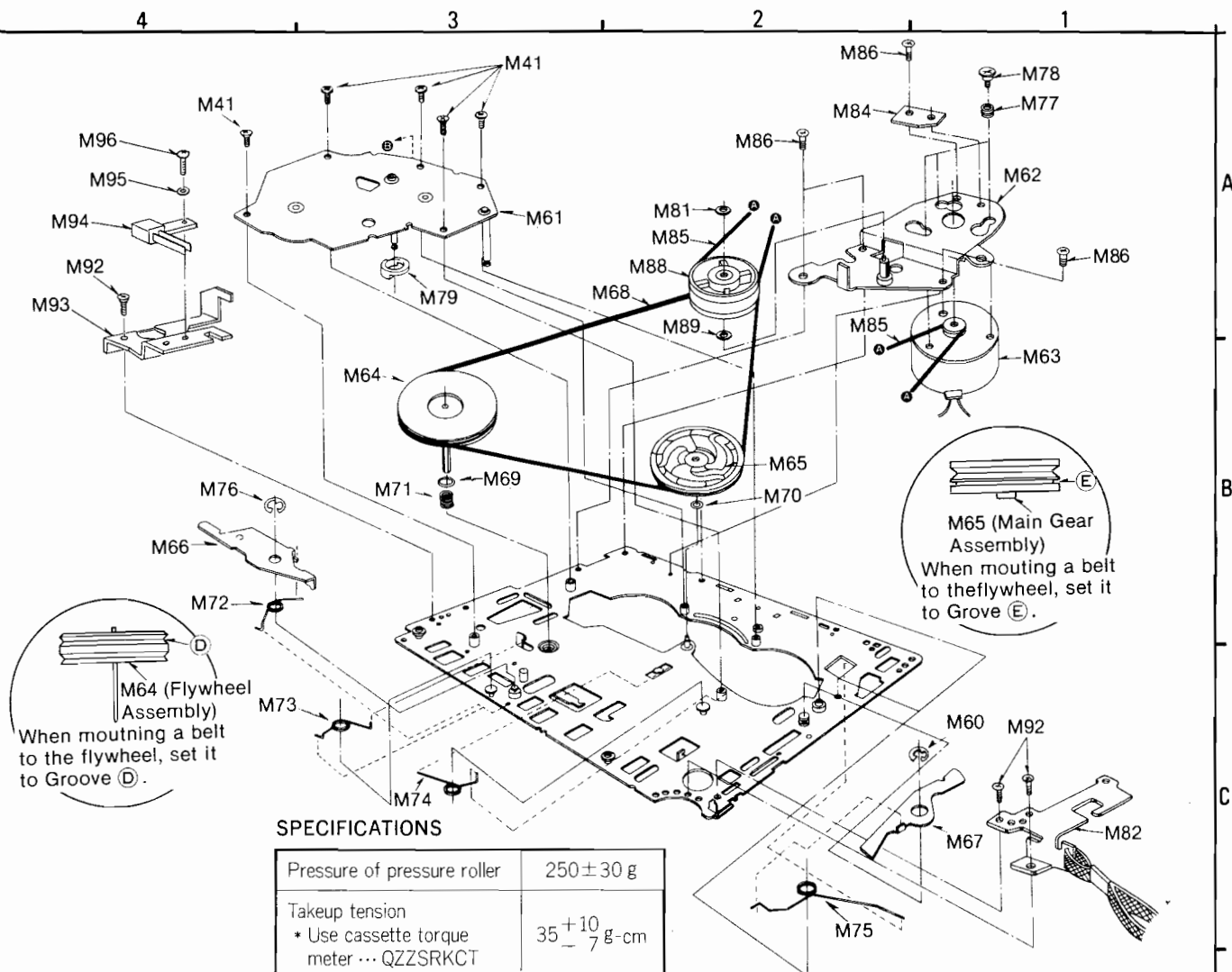


MECHANICAL PARTS LOCATION



SPRING LOCATION





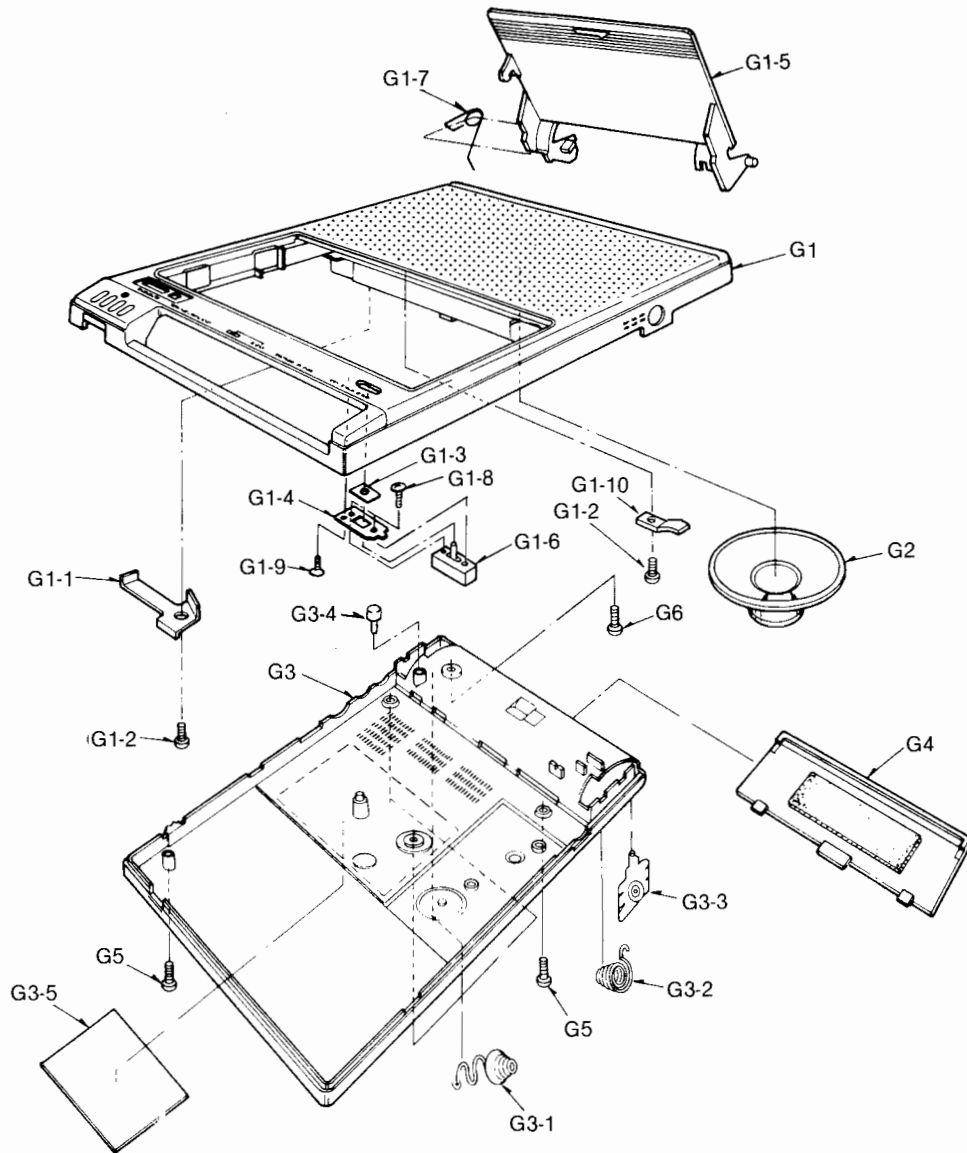
SPECIFICATIONS

Pressure of pressure roller	250 ± 30 g
Takeup tension * Use cassette torque meter ... QZZSRKCT	35 \pm 10 - 7 g-cm
Wow and flutter (JIS) * Use test tape ... QZZCWAT	Less than 0.5% (RMS)

REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
MECHANICAL PARTS			M 32	QDB0256	Counter Belt	M 67	QXL1307	Brake Arm Assembly
M 1	QMK1795	Chassis Cover	M 33	QTD1274	Head Lead Clamper	M 68	QDB0279	Flywheel Belt
M 2	QDG1238	Supply Reel Table	M 34	QXL1282	Pressure Roller Arm Assembly	M 69	QBW2059	Washer
M 3	QXD0128	Takeup Reel Table	M 35	QXK2158	Head Base Plate Assembly	M 70	QBW2010	Washer
M 4	QML3451	Auto-Stop Detection Lever	M 36	XUC2FT	Stop Ring 2φ	M 71	QBC1403	Flywheel Spring
M 5	QXR0471	Control Rod Assembly	M 37	XSN2 + 4	Screw \varnothing 2 × 4	M 72	QBN1697	Cue Lever Spring
M 6	QML3447	Erase Safety Lever	M 38	XSN2 + 12	Screw \varnothing 2 × 12	M 73	QBN1649	Lock Rod Spring
M 7	QXR0495	Eject Rod Assembly	M 39	XTSQ16A4JFC	Screw \varnothing 1.6 × 4	M 74	QBN1654	Timing Rod Spring
M 8	QXR0472	Timing Rod Assembly	M 40	QHQ1293	Step Screw	M 75	QBN1695	Brake Arm Spring
M 9	QML3792	Record/Playback Selection Lever	M 41	XTNQ16C4JFY	Screw \varnothing 1.6 × 4	M 76	XUC2FT	Stop Ring 2φ
M 10	QXL1278	Fast Wind Gear Assembly	M 42	refer to E1	Record/Playback Head	M 77	QBG1676	Motor Rubber
M 11	QXL1279	Takeup Gear Lever Assembly	M 43	QBW2008	Washer	M 78	QHQ1302	Step Screw
M 12	refer to E2	Erase Head	M 44	QBN1650	Pressure Roller Spring	M 79	QMD0021	Auto-Stop Cam
M 13	QXL1412	Lock Release Lever Assembly	M 45	QBN1651	Playback Spring	M 80	QMC0095	Rod Collar
M 14	QML3442	Fast Wind Control Rod	M 46	QBC1339	Head Spring	M 81	QBW2030	Washer
M 15	QMF2078	Control Lever Pressure Plate	M 47	QBN1829	Auto-Stop Detection Lever Spring	M 82	QYH0103K	Hand Strap Assembly
M 16	QMR1742	Fast Forward Rod	M 48	QBN1647	Erase Safety Lever Spring	M 83	QBC1402	Back Tension Spring
M 17	QMR1741	Rewind Rod	M 49	QBP1843	Cassette Retainer Spring	M 84	QMF2112	Stopper
M 18	QXR0473	Playback Rod Assembly	M 51	QBT1864	Fast Wind Control Lever	M 85	QDB0280	Motor Belt
M 19	QXR0494	Record Rod Assembly	M 52	QBT1874	Lock Release Lever Spring	M 86	XTNQ16C3F	Screw \varnothing 1.6 × 3
M 20	QXR0476	Stop Rod Assembly	M 54	QBT1875	Eject Lever Spring	M 87	XSBQ2D45	Head Adjustment Screw
M 21	QMR1744	Switch Rod	M 55	QBT1863	Counter Lever Spring	M 88	QXP0630	Pulley Assembly
M 22	QMR1743	Lock Rod	M 56	QBT1862	Stop Rod Spring	M 89	QBW2012	Washer
M 23	QXA0776	Counter Angle Assembly	M 57	QBT1860	Playback Rod Spring	M 90	XQN16 + C4FY	Screw \varnothing 1.6 × 4
M 24	QDC0146	Tape Counter	M 58	QBT1861	Record Rod Spring	M 91	XQS16 + A22FC	Screw \varnothing 1.6 × 2.2
M 25	QXA0777	Button Angle Assembly	M 59	XTNQ16A3JFC	Screw \varnothing 1.6 × 3	M 92	XTNQ16 + 3F	Screw \varnothing 1.6 × 3
M 26	QMN2412	Button Shaft	M 60	XUB3FT	Stop Ring 3φ	M 93	QMA4455	Switch Angle
M 27	QGO1844K	Push Button (Stop/Eject)	M 61	QXK2387	Lower Base Plate Assembly	M 94	refer to S5	Leaf Switch (FF/REW Switch)
M 28	QGO1845K	Push Button (Playback)	M 62	QXA1157	Motor Holding Plate Assembly	M 95	XWC2B	Washer
M 29	QGO1847K	Push Button (Fast Forward/Cue)	M 63	HCI5S6RF	DC Motor	M 96	XSN2 + 4	Screw \varnothing 2 × 4
M 30	QGO1846K	Push Button (Rewind/Review)	M 64	QXF0169	Flywheel Assembly	M 97	QMG0071	Tape Guide
M 31	QGO1848	Push Button (Record)	M 65	QXG1058	Main Gear Assembly	M 98	XQN16A + 16FC	Screw \varnothing 1.5 × 1.6
			M 66	QML3449	Cue Lever	M 99	QXA1291	Head Plate Assembly
						M 100	XSS2 + 15	Screw \varnothing 2 × 1.5

CABINET PARTS LOCATION



REPLACEMENT PARTS LIST

Ref No.	Part No.	Part Name & Description	Ref No.	Part No.	Part Name & Description
CABINET PARTS			G 3-3	QJB0144	Battery Terminal (+)
G 1	QYM0861	Main Case Assembly	G 3-4	QBG1553	Rubber Cushion
G 1-1	QBP1929	Cassette Lid Spring	G 3-5	QGS3045	Main Name Plate
G 1-2	XTN2 + 6B	Tapping Screw $\phi 2 \times 6$	G 4	QYF0437	Battery Cover Assembly
G 1-3	QQC1900	Shelter (for G1-6)	G 5	XTN26 + 23JFZ	Screw $\phi 2.6 \times 2.3$
G 1-4	QMF2257	Switch (S4) Angle	G 6	XTN26 + 8B	Tapping Screw $\phi 2.6 \times 8$
G 1-5	QKF2095	Cassette Lid	ACCESSORY		
G 1-6	refer to S4	Monitor Switch	A 1	QQT3372	Instruction Book
G 1-7	QBN1875	Eject Spring	PACKINGS		
G 1-8	XQS14 + C18	Screw $\phi 1.4 \times 1.8$	P 1	QPN4371	Inside Carton
G 1-9	XQN16 + C35	Screw $\phi 1.6 \times 3.5$	P 2	XZB16X25A02	Poly Bag (for UNIT)
G 1-10	QMA3903	Speaker Holding Metal	P 3	QPS0445	Pad
G 2	EAS65P31S	Speaker	P 4	QPA0657	Cushion
G 3	QYM0862	Bottom Case Assembly			
G 3-1	QBN8024	Battery Terminal-A (-)			
G 3-2	QBN8023	Battery Terminal-B (-)			